UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,091	08/31/2001	David R. Kranz	12942.0067.N	1349

26361 7590 05/15/2003

STEPHEN H. CAGLE
HOWREY, SIMON, ARNOLD & WHITE, LLP
750 BERING DRIVE
HOUSTON, TX 77057

EXAMINER
STRICKLAND, JONAS N

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 05/15/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/944,091	KRANZ, DAVID R.	
	Examiner	Art Unit	
	Jonas N Strickland	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to the amendment filed on 2/24/03 as Paper No. 5. Claims 1-21 are currently pending. Claims 20 and 21 have been amended. In view of Applicant's response to the 35 USC 102 rejection of claims 1-7, 16-19 and 21 as being anticipated by Debbage et al (US Patent 5,762,885) and the 35 USC 103 rejection of claims 8-15 and 20 as being unpatentable over Debbage et al (US Patent 5,762,885) and Courty et al. (US Patent 4,088,736) the previous rejections have been withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-12 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Debbage et al. (US Patent 5,762,885) in view of Moore et al. (EP 0609813 A1).

Applicant claims a process for removing gaseous pollutants from combustion gases comprising contacting a catalyst absorber with said combustion gases until the catalyst absorber is at least partially saturated, the improvement comprising regenerating the catalyst absorber with a regeneration stream of synthesis gas produced in a gasification unit.

Debbage et al discloses an apparatus for removing contaminants from gaseous streams. The reference discloses an apparatus for regenerating a catalyst absorber after contact with a combustion exhaust. The catalyst absorber is comprised of an oxidation catalyst, which is comprised of platinum, palladium, as well as rhodium, which is supported on a high surface area support, such as alumina, zirconia, titania, silica, or combinations thereof (col. 3, lines 29-35). The high surface area support may be coated on a ceramic or metal matrix structure (col. 3, lines 49-50). The oxidation catalyst is coated with an absorber, which comprises alkali or alkaline earth mixtures of hydroxides, bicarbonates, and carbonates (col. 3, lines 53-58 and col. 4, lines 7-14). With respect to claim 16, Debbage et al continues to teach a turbine exhaust (see Figure 1). Debbage et al continues to disclose a process using a heat recovery steam generator, with respect to claims 17-19 (col. 4, lines 36-53). However, Debbage et al. does not teach regenerating the catalyst absorber with a regeneration stream of synthesis gas produced in a gasification unit.

Moore et al. teaches an integrated production of fuel gas and organic compounds from synthesis gas. Moore et al. continues to teach wherein catalyst poisoning is prevented by absorbing acid gases, such as sulfur-containing compounds by regenerating with a synthesis gas (see abstract). Moore et al. continues to teach wherein the catalyst, reactor type is not critical to the invention, therefore a catalyst absorber system having an oxidation catalyst for treating acid gases would have been obvious to one of ordinary skill in the art, since the reactor type is not critical to the invention as taught by Moore et al. (p. 4, lines 55-58). Furthermore, Moore et al. teaches wherein the method is particularly useful for integration with a combined cycle coal gasification system utilizing a gas turbine for electric power generation (see abstract).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Debbage et al., by regenerating a catalyst absorber system with synthesis gas, because Moore et al. teaches a process for removing acidic gases from a gas stream, wherein synthesis gas is used as a regeneration stream from a gasification unit. Furthermore, Moore et al. teaches wherein regeneration with synthesis gas is essential in reducing the acidic gases from catalytic poisoning. Therefore, it would have been obvious to one of ordinary skill in the art to regenerate a catalyst absorber, containing acidic gases as taught by Debbage et al. with the synthesis gas as taught by Moore et al.

With respect to claims 10-12, Debbage et al. discloses a shift reactor, a shift catalyst, and wherein the shift catalyst converts carbon monoxide to hydrogen and carbon dioxide (col. 5, lines 28-45).

5. Claims 13-15, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Debbage et al. (US Patent 5,762,885) in view of Moore et al. (EP 0609813 A1) as applied to claims 1-12 and 16-19 above, and further in view of Courty et al. (US Patent 4,088,736).

Applicant claims with respect to claims 13-15, 20, and 21, wherein the shift catalyst converts at least a portion of any carbonyl sulfide contained in the synthesis gas to hydrogen sulfide and carbon dioxide and wherein the hydrogen sulfide removal unit comprises a zinc oxide bed. The teachings of Debbage et al. in view of Moore et al. are silent with respect to the limitations of claims 13-15, 20, and 21.

However, Courty et al. teaches a process for purifying a gas containing hydrogen sulfide from a gasification unit having large amounts of carbon dioxide. Courty et al. continues to teach wherein the hydrogen sulfide is treated with a mass of zinc oxide (see abstract and col. 1, lines 15-46).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Debbage et al. and Moore et al., which teaches producing carbon dioxide from a gasification unit and reducing the amount of pollutants produced from the process, such as hydrogen sulfide, based on the teachings of Courty et al., which teaches a process for reducing hydrogen sulfide from a gasification process by passing the gas comprised of hydrogen sulfide onto a bed of zinc oxide. Such modification

would have been obvious to one of ordinary skill in the art, because one of ordinary skill in the art, would have expected a gasification process, which includes reducing pollutants, such as hydrogen sulfide as taught by Courty et al., to be similarly useful and applicable to a gasification process for reducing pollutants as taught by Debbage et al. and Moore et al.

With respect to claim 13, it would have been obvious to one of ordinary skill in the art to expect the process disclosed by Debbage et al. in view of Courty to convert a carbonyl sulfide to hydrogen sulfide and carbon dioxide, since Debbage et al. teaches a shift catalyst and shift reactor.

With respect to claim 21, Moore et al. teaches utilizing a gas turbine for power generation (see abstract).

Response to Arguments

6. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Verloop et al. (US Patent 4,153,674) ; Jahnke et al. (US Patent 6,090,356) ; Lapidus et al. (US Patent 6,531,518 B1) ; van den Berg (EP 0661375 A1).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonas N Strickland whose telephone number is 703-306-5692. The examiner can normally be reached on M-TH. 7:30-5:00, off 1st Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0661.

Jonas N. Strickland
May 13, 2003

Wayne A. Langel

WAYNE A. LANGEL
PRIMARY EXAMINER